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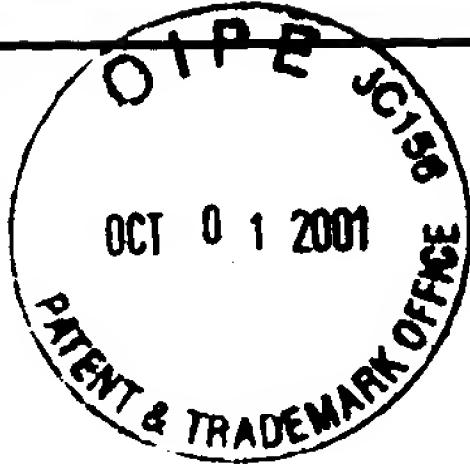
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*Has received an application for a patent for a new and useful invention. The title and description of the invention are enclosed. The requirements of law have been complied with, and it has been determined that a patent on the invention shall be granted under the law.*

*Therefore, this*

## United States Patent

*Grants to the person(s) having title to this patent the right to exclude others from making, using, offering for sale, or selling the invention throughout the United States of America or importing the invention into the United States of America for the term set forth below, subject to the payment of maintenance fees as provided by law.*

*If this application was filed prior to June 8, 1995, the term of this patent is the longer of seventeen years from the date of grant of this patent or twenty years from the earliest effective U.S. filing date of the application, subject to any statutory extension.*

*If this application was filed on or after June 8, 1995, the term of this patent is twenty years from the U.S. filing date, subject to any statutory extension. If the application contains a specific reference to an earlier filed application or applications under 35 U.S.C. 120, 121 or 365(c), the term of the patent is twenty years from the date on which the earliest application was filed, subject to any statutory extension.*

*Bruce Lehman*

*Commissioner of Patents and Trademarks*

*Leptothah Melcombe*

*Artist*



## United States Patent [19]

Nguyen et al.

[11] Patent Number: 5,710,461

[45] Date of Patent: Jan. 20, 1998

[54] SRAM CELL FABRICATION WITH  
INTERLEVEL DIELECTRIC  
PLANARIZATION[75] Inventors: Loi Nguyen, Carrollton; Ravishankar  
Sundaresan, Garland, both of Tex.[73] Assignee: SGS-Thomson Microelectronics, Inc.,  
Carrollton, Tex.

[21] Appl. No.: 781,429

[22] Filed: Jan. 10, 1997

## Related U.S. Application Data

[60] Continuation of Ser. No. 328,736, Oct. 25, 1995, abandoned,  
which is a division of Ser. No. 149,338, Dec. 17, 1993, Pat.  
No. 5,395,785.[51] Int. Cl. 6 ..... H01L 29/34; H01L 23/48;  
H01L 23/522; H01L 29/54[52] U.S. Cl. ..... 257/754; 257/760; 257/640;  
257/904; 257/752; 257/903; 257/350; 257/380;  
257/381; 257/385; 257/758[58] Field of Search ..... 257/754, 380,  
257/381, 382, 379, 752, 755, 756, 757,  
758, 903, 908, 905, 904, 350, 384, 385,  
760, 640

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Primary Examiner—Tom Thomas

Assistant Examiner—Alexander Oscar Williams

Attorney, Agent, or Firm—Theodore E. Galanthay; Lisa K.  
Jorgenson

## [57] ABSTRACT

A 4-T SRAM cell in which two layers of permanent SOG  
(with an intermediate oxide layer) are used to provide  
planarization between the first and topmost poly layers.

18 Claims, 5 Drawing Sheets

